

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**Applicant:** William G. America

**Conf. No.:** 3775

**Serial No.:** 10/709,776

**Art Unit:** 2811

**Filed:** 05/27/2004

**Examiner:** Im, Junghwa M.

**Title:** SEMICONDUCTOR DEVICE FORMED  
BY IN-SITU MODIFICATION OF  
DIELECTRIC LAYER AND RELATED  
METHODS

**Docket No.:** FIS920040083US1  
(IBMF-0058)

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Sir:

Applicants respectfully request that a panel of experienced examiners perform a detailed review of appealable issues for the above-identified patent application pursuant to the Pre-Appeal Brief Conference Pilot Program. Applicants submit that the above-identified application is not in condition for appeal because the Office has failed to establish a *prima facie* case of obviousness based on an error in facts. Claims 21-26 are pending in this application.

Turning to the rejection in the Final Office Action, claims 21-26 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Smith et al. (USPN 6,255,233, hereinafter “Smith”), in view of Todd (USPN 6,733,830, hereinafter “Todd”). Applicants submit that this rejection is clearly not proper and without basis because at least one claim limitation is not met by the combined features of the references cited by the Office.

As argued in the Request for Reconsideration of December 17, 2007, the cited references fail to teach or suggest each and every element of independent claim 21. In particular, neither

Smith nor Todd teaches the feature of “wherein the first dielectric sub-layer includes at least one component not included in the second dielectric sub-layer, the at least one component including perfluoroalkylsiloxanes” (claim 21, lines 8-9).

The Office admits that Smith does not teach or suggest this feature, but relies on Todd to overcome this deficiency of Smith. (Final Office Action, p. 3.) In the passage cited by the Office (*id.*), Todd teaches the use of preferred primary chemical precursors including: siloxanes of the formula  $(R_3Si)_2O$ ; (fluoroalkyl)fluorosiloxanes of the formula  $[(R_f)_{3-x-y}R^1_xF_y]Si_2O$ ; and (fluoroalkyl)silanes of the formula  $(R_f)_{4-a}SiR^1_a$ . (Todd, col. 9, lines 14-56.) However, as asserted in the Amendment of December 17, 2007, this teaching neither discloses nor suggests “an end product of perfluoroalkylsiloxanes included in a dielectric sub-layer” (p. 4), as “using perfluoroalkyl group as a precursor does not predictably and controllably result in the claimed perfluoroalkylsiloxanes,” as “a precursor is not a reagent and does not synthesize to form the resultant compound.” (*Id.*) Further, Todd does not teach the use of a perfluoroalkyl group as a precursor at all; instead, as noted above, Todd teaches the use of siloxanes, (fluoroalkyl)fluorosiloxanes, and (fluoroalkyl)silanes. (Todd, col. 9, lines 14-56 (cited by the Office).) A perfluoroalkyl group differs from a fluoroalkyl group in that, according to IUPAC nomenclature, the per- prefix indicates higher relative oxygen content in the molecule, specifically, the possibility of four different oxyanions, as compared to a fluoroalkyl group. Todd does not teach or disclose the use of a perfluoroalkyl group, and further fails to teach “the first dielectric sub-layer includes at least one component not included in the second dielectric sub-layer, the at least one component including perfluoroalkylsiloxanes.”

Accordingly, the Office has failed to state a *prima facie* case of obviousness, and this application is not in condition for appeal and should either be allowed as is, or re-opened for further prosecution.

With respect to dependent claims 22-26, these claims are believed to be allowable based on the above arguments regarding claim 21, from which they depend, as well as for their own additional features.

Applicant respectfully submits that the application is not in condition for appeal. Should the examining panel believe that anything further is necessary to place the application in better condition for allowance or for appeal, they are requested to contact Applicant's undersigned attorney at the telephone number listed below.

Respectfully submitted,

Date: May 27, 2008

/Jianping Zhang/

Jianping Zhang

Reg. No.: L0414

Hoffman Warnick LLC  
75 State Street, 14<sup>th</sup> Floor  
Albany, New York 12207  
(518) 449-0044  
(518) 449-0047 (fax)

(JMT)